



# *Emergency Info Hub*

## Design Manual

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### Abstract

Emergency Info Hub (EIH), is a central website helps the emergency services to prepare, respond and recover from a disaster, by providing all the needed data for the targeted building (E.g. Number of people, area size and emergency exits).

The main objective of this project is the count of the number of trapped people under rubbles or inside a building, by tracking their number using a simple movement sensor fitted on the main gate by Body detection technology and save this number to the cloud to be used when a disaster happens

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### 1. The project Overview Diagram:

The project consisted of two ends. Backend: represent all the hardware, and Frontend represents the user interface.

Both of these ends will be designed as the following diagram.

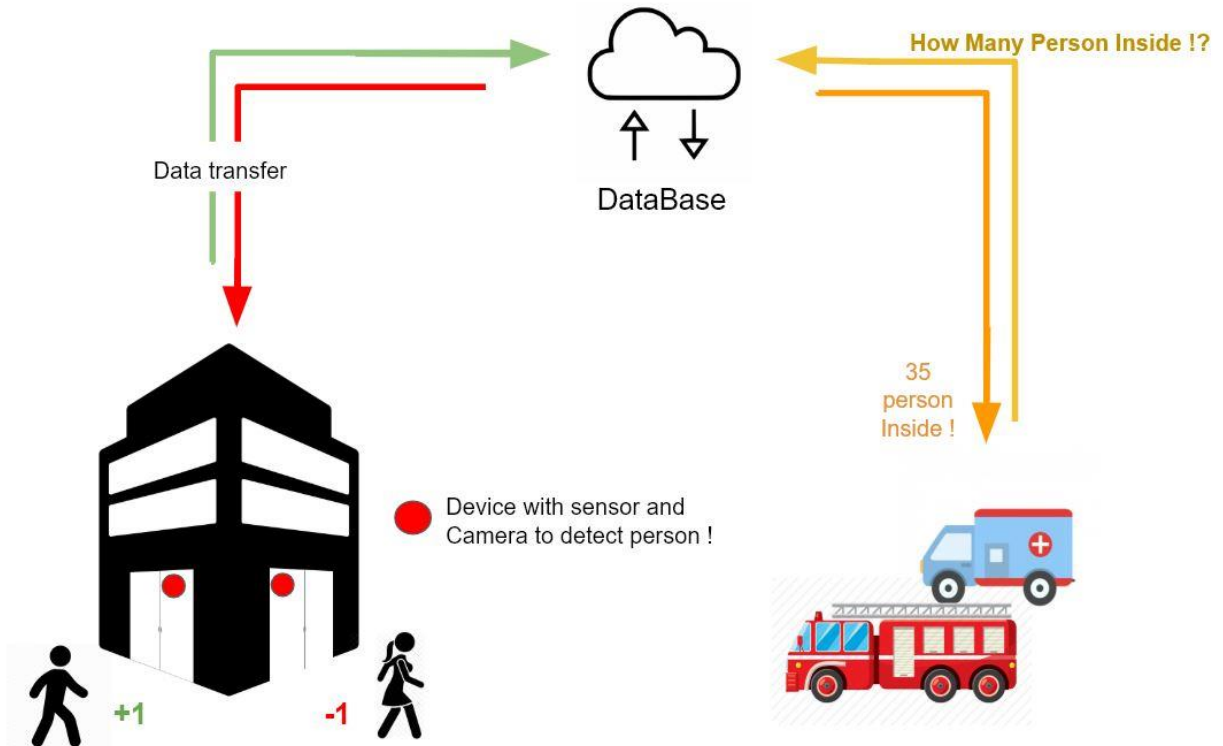


Figure 1 Overview diagram to show the system work

### 1.1. Backend

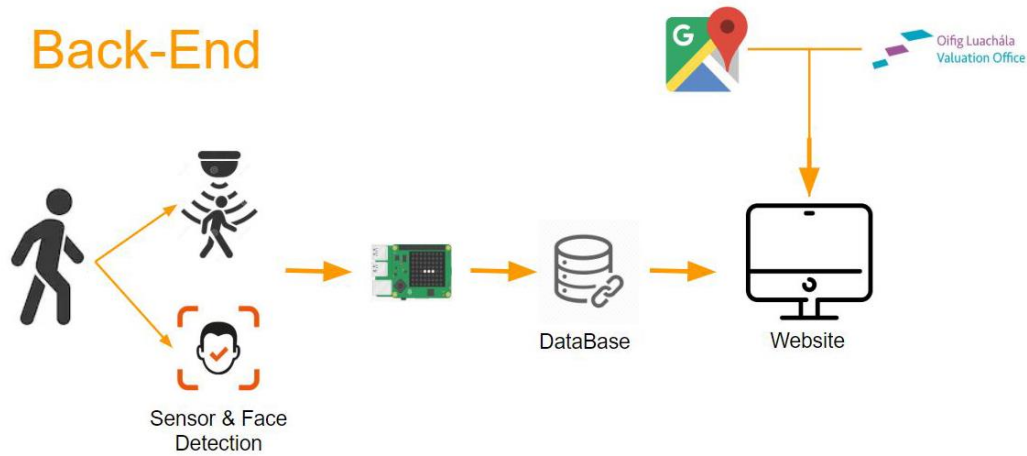


Figure 2 How it works - Front End

The above picture describes briefly what is the project Back-End process is, where the system action starts when an object approach to the gate where is the hardware fitted and installed, then the hardware updates the corresponding variables within the system.

### 1.2. Frontend

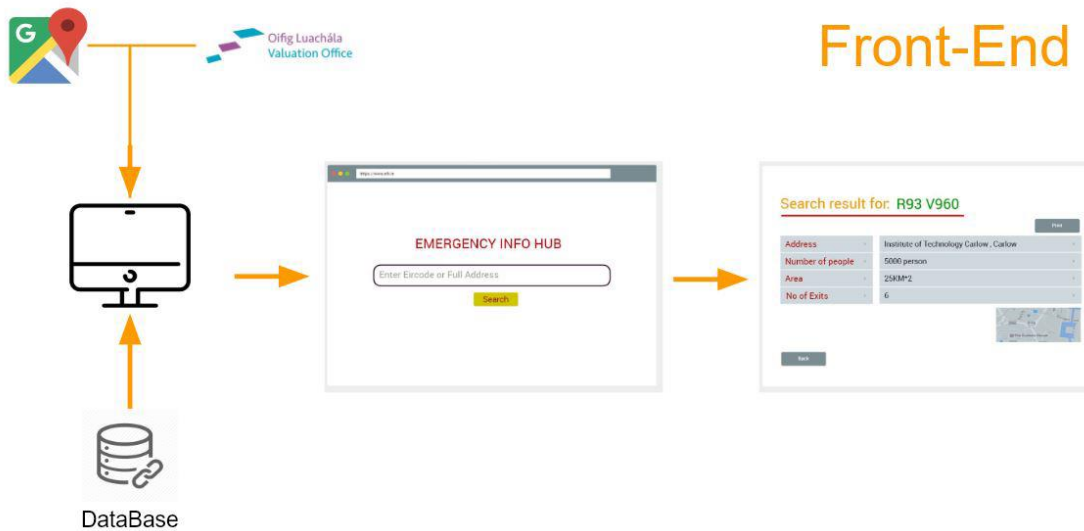
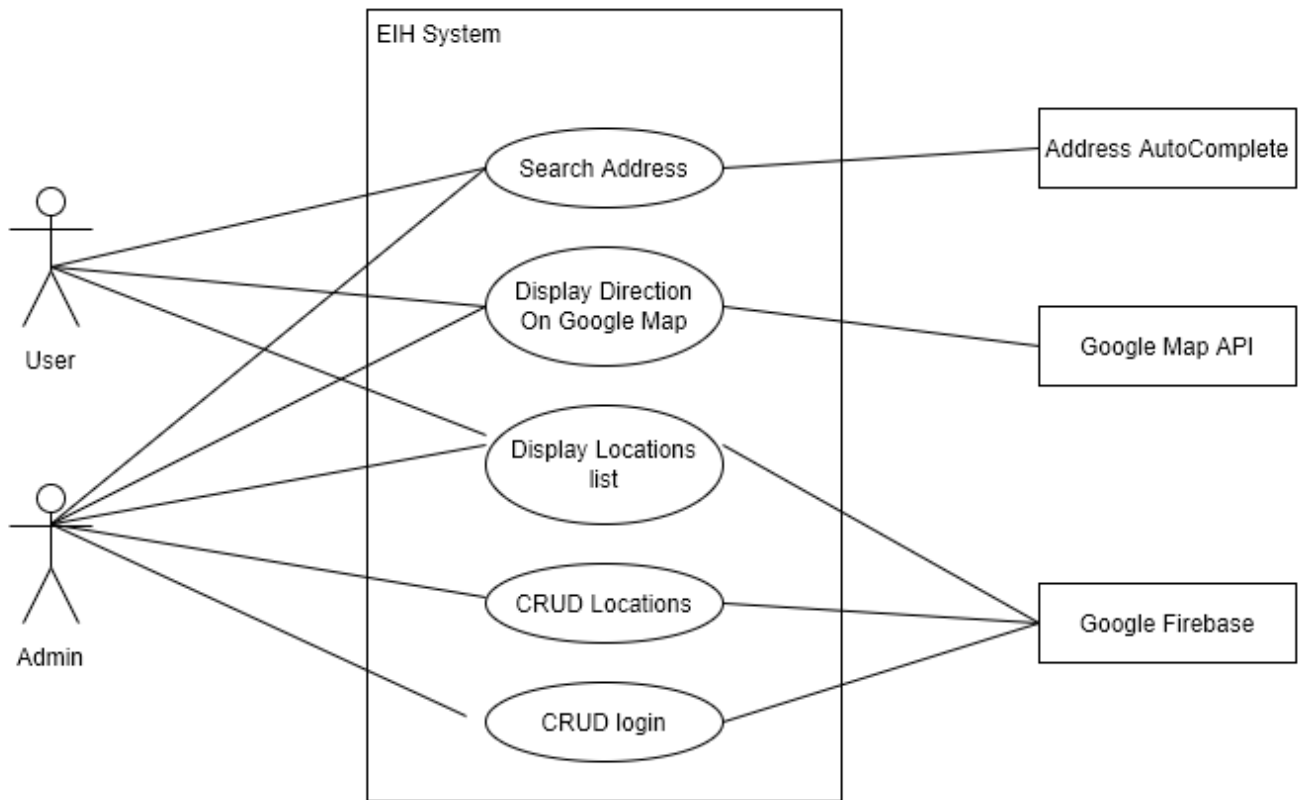


Figure 3 How it works - Back End

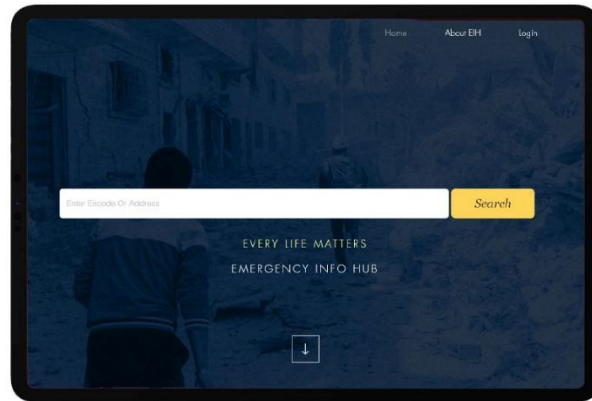
The above picture describes briefly what is the project Front-End process, the process starts when the user accesses the main webpage to the system and enter the searched address or Eircode, then all the related data will be displayed.

2. Project Use case.

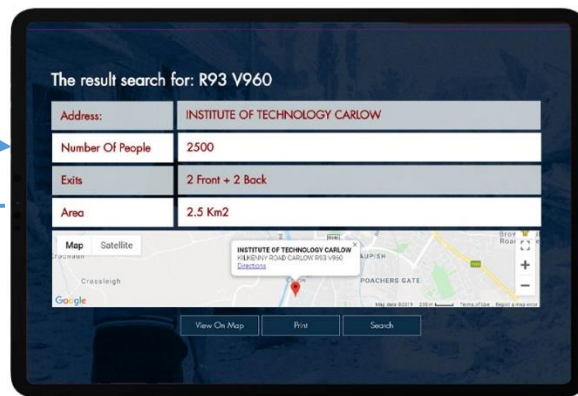


*Figure 4 EIH use case diagram*

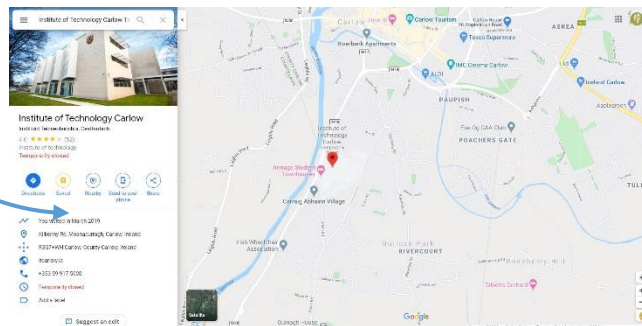
### 3. The Screens Flow Design.



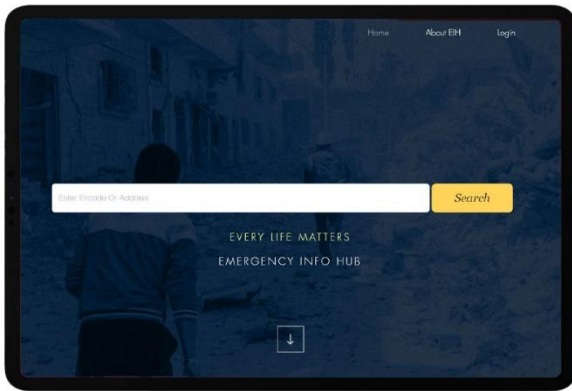
**Main Screen**



**Result Screen**



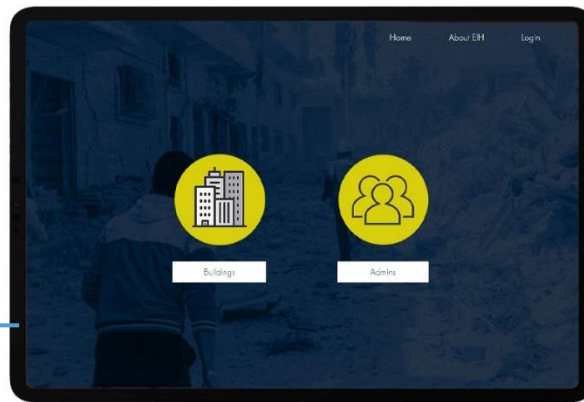
**Google Map**



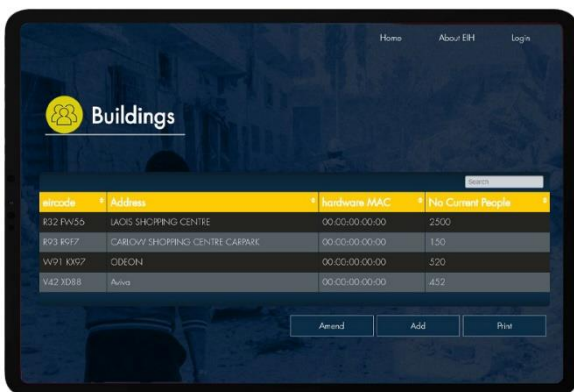
Main Screen



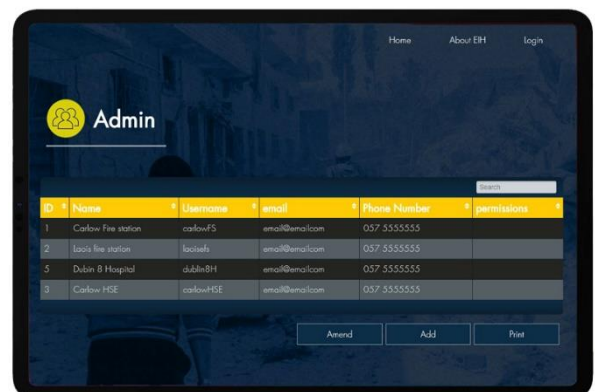
Login Screen



Admin Board



CRUD Building Screen



CRUD Admins Screen



## 4. Database Structure.

The database for this project will be design as JSON format a non-tabular structure and will be stored on Google firebase, a real-time database.

Google Firebase supports the python request to get and store the data, which is works well with the system's main development programming language.



```

-M4k14jY7EZG60wGDKVd
{
  "active": true
  "address": "PAPA JOHN'S TEMPLE BAR, ESSEX STREET EAST, TEMP..."
  "deviceId": "none"
  "eircode": "R93 V960"
  "known_name": "PAPA JOHN'S TEMPLE BAR"
  "numberOfPeopleINDetect": 0
  "timeUpdated": "20:15:27 04/12/20 UTC"
}

```

*Figure 5 database JSON file structure*

- **BUILDING-ID**: is auto-generated by the firebase with the push request, so when the user adds new building the data the key will be generated and associated with this submitted data.
- **ACTIVE**: Boolean data type, True to active and in work building, False for non-active or deleted address.
- **DEVICE-ID**: String data type, created by the user to differentiate between the hardware.
- **KNOWN NAME**: is the known and public name for the address, which makes a better understanding by the reader than the proper address.
- **ADDRESS**: String datatype, the address will be autocompleted by the google autocomplete function, the address is considered the unique value to each address where the search will be depending on.
- **EIRCODE**: for the time of this project was done, the Eircode was not used by all the address in Ireland, which is hard to be used for the search and identity.
- **NUMBER-OF-PEOPLE-DETECTED**: this is the value where the number of people gets stored and updated, the initial value is zero when the building gets added.
- **TIME-UPDATED**: is the time when any changes happening to the data, this value will be assigned by the server time.